UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,929	08/31/2005	Geoffrey Canright	OSL-023	3667

3897   7590   05/20/2008
SCHNECK & SCHNECK
P.O. BOX 2-E
SAN JOSE, CA 95109-0005

EXAMINER
PARK, JEONG S

ART UNIT	PAPER NUMBER
2154	

MAIL DATE	DELIVERY MODE
05/20/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .
2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1,4-7,11,12 and 15-19* is/are rejected.
7)☒ Claim(s) *2, 3, 8-10, 13, 14 and 20-22* is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All   b)☐ Some *   c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____ .
      3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____ .

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application
6)☐ Other: _____ .

DETAILED ACTION

1.   This action is in response to communications filed February 1, 2008.

Allowable Subject Matter

2.   Claims 2, 3, 8-10, 13, 14 and 20-22 are objected to as being dependent upon a

rejected base claim, but would be allowable if rewritten in independent form including all

of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1, 4-7, 11, 12 and 15-19 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Toh (U.S. Patent No. 5,987,011) in view of Basso et al. (hereinafter

Basso)(U.S. Patent No. 6,721,800 B1), and further in view of Munger et al. (hereinafter

Munger)(U.S. Patent No. 6,618,761 B2).

Regarding claims 1, 11, 12 and 15, Toh teaches as follows:

a method for routing messages from a source node (source mobile host) to a

destination node (destination mobile host) in a dynamic network (ad-hoc mobile

communications network)(see, e.g., col. 3, lines 38-44), said source node including a

routing table (associativity table), each row in the routing table representing a possible

destination node for a data message transmitted from the source node, and each row in

the routing table (associativity table) including one probability value for each neighbor

node of the source node (stability of communications links between neighboring mobile

host)(see, e.g., col. 3, lines 38-64), the method comprising:

updating the probability values (interpreted as a stability of communications links)

with quality measurements taken each time a message (identifier beacons (ticks)) is

sent from the source node to a destination node (see, e.g., col. 3, lines 31-37).

Toh does not teach percentage routing method.

Basso teaches as follows:

probability value for each neighbor node of the source node (see, e.g., col. 3,

lines 34-36);

routing a predefined percentage (72 in figure 2) of the messages by choosing the

neighbor node (next hop0 60a in figure 2) with the highest probability value (action data

70 in figure 2) in the row for a destination node (subnet destination address 52 in figure

2) in the routing table (ECMP forwarding table) in figure 2)(see, e.g., col. 3, lines 21-48);

and

routing the other messages by distributing the messages among the neighbor

nodes (next hop1 60b and next hop2 60c in figure 2) according to the probability values

given in the same row in the routing table (see, e.g., col. 3, lines 21-48).

It would have been obvious for one of ordinary skill in the art at the time of the

invention to modify Toh to include percentage routing among multiple next nodes using

a probability value for each neighboring links as taught by Basso in order to increase

the reliability and efficiency of the route selecting process in a ad-hoc mobile

communications.

Toh in view of Basso do not teach the amended measuring the quality taken a

data message sent from the source node to the destination node even though Toh

teaches measuring the link quality by the identifier beacons (ticks) which is sent from

the source node to a destination node (see, e.g., col. 3, lines 31-37).

Also Toh in view of Basso do not teach the amended tunable predefined

percentage of message even though Basso teaches the predefined percentage of the

message (see, e.g., col. 3, lines 21-48).

Munger teaches the deficiency of Toh in view Basso as follows:

distributing (equivalent to applicant's routing) packets across different paths

according to transmission link quality (see, e.g., col. 33, lines 3-7);

updating the probability values with quality measurements (see, e.g., col. 34,

lines 8-19) taken each time a data message is sent from the source node to the

destination node (the health of each path is monitored in the transmitter (equivalent to

applicant's source node) by comparing the number of packets transmitted to the number

of packet acknowledgement received from the receiver (equivalent to applicant's

destination node), see, e.g., col. 33, lines 14-25); and

a tunable predefined percentage (set the weight (equivalent to applicant's

predefined percentage) for each path is adjusted based on the path quality, see, e.g.,

col. 34, lines 22-41).

It would be obvious to combine Munger with Toh in view of Basso in order to

determine the path quality based on the performance of the sent data from the source to

the destination and in order to adjust the weight (percentage) based on the quality

measured.

Regarding claims 4, 5, 16 and 17, Toh teaches as follows:

at the detection of a lost connection with a neighbor node (route reconstruction (RRC) phase due to movement of any mobile nodes, see, e.g., col. 11, lines 36-41), for each row of the routing table for the node, removing the probability value associated with the lost neighbor (invalid route erasure) and adjusting the probability values of the rest of the neighbors so as to sum to one (partial route discovery), and creating a new row in the routing table for the lost neighbor node (new route discovery), by initially assigning equal probability values for each of the respective remaining neighbor nodes in the new routing table row (new route discovery phase resets all the stability values), and then adjusting the probability values according to quality measurements performed by data messages emitted from the node towards the lost neighbor node (explained above regarding claim 2)(see, e.g., col. 11, line 35 to col. 12, line 26); and

adjusting probability values to re-establish the relative relations among the remaining neighbors prior to the loss of the neighbor node (new route discovery phase resets all the stability values when deleting all routing table entries, see, e.g., col. 11, line 53-57).

The detail steps or methods due to a lost connection are inherently taught in route reconstruction phase by Toh.

Regarding claims 6 and 18, Toh teaches as follows:

waiting a predefined period of time from detection until adjusting existing routing table rows and creating new routing table rows (source node waits until it receives

REPLY packet from the destination node within BQ-TIMEOUT, see, e.g., col. 11, lines 36-65).

Regarding claims 7 and 19, Toh teaches as follows:

dummy messages (BQ and REPLY packets) are specially emitted after the predefined time interval (BQ-TIMEOUT), and at regular intervals thereafter, only for the purpose of finding a lost neighbor node (BQ and REPLY packets for route discovery phase, see, e.g., col. 8, lines 7-14);

BQ and REPLY packets are used for updating the routing tables (see, e.g., col. 8, lines 7-14); and

identifier beacons (ticks) update the status of its corresponding links (see, e.g., col. 6, lines 7-12).

Toh does not teach that performing the route quality measurements and updating the routing tables are simply done by the data messages themselves.

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Toh to include non-connection oriented communications between mobile nodes by piggybacking the signal packets (dummy packets) with the data packets in order to simplify the communications method even though lots of disadvantages as known in the art.

Response to Arguments

5.   Applicant's arguments filed 2/1/2008, with respect to claim 1, 4-7, 11, 12 and 15-19 have been considered but are moot in view of the new ground(s) of rejection.

A.   Summary of Applicant's Arguments

In the remarks, the applicant argues as followings:

1) Applicant respectfully traverses. "[R]outing a predefined percentage of the messages (by choosing the) (to a) neighbor node (with the) (having a) highest probability value" as recited (emphasis added) in claims 1 and 11 and referred to in the Specification (on page 15 lines 18-20, paragraph 56) as "greedy" routing, "always chooses the highest weight entry for the next hop" (page 14 lines 28, 29, paragraph 53). "Greedy" routing is not disclosed in Basso which, in contrast, uses "regular" routing.

B.   Response to Arguments:

In response to argument 1), Toh teaches the deterministic routing and does not teach a percentage routing. The deficiency of the percentage routing is taught by Basso.

Therefore, claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toh in view of Basso.

It is the claims that define the claimed invention, and it is claims, not specifications that are anticipated or unpatentable. *Constant v. Advanced Micro-Devices Inc.*, 7 USPQ2d 1064.

Conclusion

6.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to JEONG S. PARK whose telephone number is (571)270-

1597. The examiner can normally be reached on Monday through Friday 7:00 - 3:30

EST.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S. P./
Examiner, Art Unit 2154

May 14, 2008

/Joseph E. Avellino/
Primary Examiner, Art Unit 2146